Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Canceled)

2. (Original) A method of identifying a test compound that affects a biological event of interest, the method comprising steps of:

providing a plurality of test compounds;

providing cells containing an inducible reporter gene, wherein expression of the reporter gene results in the production of a reporter gene product,

wherein the product is secreted by the cell,

wherein the product is detectable, and

wherein the presence of the products indicates occurrence or non-occurrence of a selected biological event;

contacting the cells with the plurality of test compounds; and

identifying test compounds which promote or inhibit a biological event based on production of the reporter gene product.

3. (Currently amended) The method of claim 2, wherein the plurality of test compounds are provided attached to a solid support through a cleavable linkage and are subsequently cleaved from the solid support.

4. (Original) The method of claim 2, wherein the linkage is severable by irradiation with light.

5. (Original) The method of claim 3, wherein the solid support is associated with a molecular sensor.

6. (Original) The method of claim 5, wherein the solid support is associated with a molecular sensor that can detect nitric oxide.

7. (Currently amended) The method of claim 5, wherein the molecular sensor is ~~2,3-diaminonapthalene~~ 2,3-diaminonaphthalene (DAN).

8. (Withdrawn) The method of claim 5, wherein the molecular sensor is diaminofluorescein.

9. (Currently amended) The method of claim [[4]] 6, wherein the molecular sensor is characterized in that at least one optical property of the sensor is altered in the presence of nitric oxide.

10. (Original) The method of claim 2, wherein the test compounds are small molecules.

11. (Withdrawn) The method of claim 2, wherein the plurality of test compounds is a combinatorial library of chemical compounds.

12. (Withdrawn) The method of claim 2, wherein the plurality of test compounds is a combinatorial library of small molecules.

13. (Withdrawn) The method of claim 2, wherein the test compounds are proteins.

14. (Withdrawn) The method of claim 2, wherein the test compounds are peptides.

15. (Withdrawn) The method of claim 2, wherein the test compounds are nucleic acids.

16. (Withdrawn) The method of claim 2, wherein the reporter gene encodes a reporter gene product that catalyzes the production of a chemical compound that is secreted by the cell.

17. (Withdrawn) The method of claim 2, wherein the reporter gene encodes a reporter gene product that is a small molecule.

18. (Original) The method of claim 2, wherein the reporter gene encodes a reporter gene product that catalyzes the production of a membrane permeable chemical compound that is detectable.

19. (Original) The method of claim 18, wherein the chemical compound is a gas at room temperature and 1 atm of pressure.

20. (Original) The method of claim 19, wherein the chemical compound is nitric oxide.

21. (Withdrawn) The method of claim 19, wherein the chemical compound is molecular oxygen.

22. (Withdrawn) The method of claim 19, wherein the chemical compound is carbon monoxide.

23. (Withdrawn) The method of claim 19, wherein the chemical compound is molecular nitrogen.

24. (Withdrawn) The method of claim 19, wherein the chemical compound is carbon dioxide.

25. (Withdrawn) The method of claim 2, wherein the cells are macrophages.

26. (Original) The method of claim 2, wherein the cells are yeast.

27. (Withdrawn) The method of claim 2, wherein the cells are mammalian cells.

28. (Withdrawn) The method of claim 2, wherein the cells are human cells.

29. (Withdrawn) The method of claim 2, wherein the cells are bacterial cells.

30. (Original) The method of claim 2, wherein the reporter gene is nitric oxide synthase.

31. (Original) The method of claim 2, wherein the reporter gene product is nitric oxide.

32. (Currently amended) The method of claim [[3]] 5, 6, 7, 8, or 9, wherein the step of identifying further comprises sorting the solid supports using fluorescence-activated bead sorting (FABS).

33. (Original) The method of claim 3, wherein the step of identifying comprises decoding tags on the solid support which correspond to the synthetic history of the test compound attached or was once attached to the bead or structural features of the test compound.

34.-47. (Canceled)

48. (New) A method of identifying a test compound that affects a biological event of interest, the method comprising steps of:

providing a plurality of test compounds;

providing cells containing an inducible nitric oxide synthase gene, wherein expression of the reporter gene results in the production of nitric oxide,

wherein the presence of the nitric oxide indicates occurrence or non-occurrence of a selected biological event;

contacting the cells with the plurality of test compounds; and

identifying test compounds which promote or inhibit a biological event based on production of nitric oxide.

49. (New) The method of claim 48, wherein the selected biological event is a protein binding event.

50. (New) The method of claim 2, wherein the reporter gene product is a nucleic acid.

51. (New) The method of claim 50, wherein the nucleic acid is a primary transcript, a spliced transcript, a mature mRNA, or a spliced intron.

52. (New) The method of claim 2, wherein the reporter gene product is a protein or polypeptide.

53. (New) The method of claim 2, wherein the reporter gene product is a small molecule.

54. (New) The method of claim 2, wherein the biological event is a protein-protein interaction.

55. (New) A method of identifying a test compound that affects a biological event of interest, the method comprising steps of :

providing a plurality of test compounds associated with a plurality of solid supports, wherein a detecting agent is associated with the solid support;

providing cells containing an inducible reporter gene, wherein expression of the reporter gene results in the production of a reporter gene product,

wherein the product is secreted by the cell;

wherein the presence of the product indicates occurrence or non-occurrence of a selected biological event; and

wherein the product is detected by the detecting agent;

releasing the test compounds from the solid supports;

contacting the cells with the plurality of released test compounds; and

identifying test compounds which promote or inhibit the selected biological event based on detection of the reporter gene product by the detecting agent.

56. (New) The method of claim 55, wherein the detection of the reporter gene product by the detecting agent comprises detecting a change in the fluorescence, phosphorescence, absorbance, chemiluminescence, or enzymatic activity of the detecting agent.

57. (New) The method of claim 2, wherein the reporter gene is selected from the group consisting of nitric oxide synthase, luciferase, β-lactamase, alkaline phosphatase, and green fluorescent protein (GFP).

58. (New) The method of claim 2, wherein the biological event is the binding of IκB to NFκB.

59. (New) The method of claim 2, wherein the biological event is the binding of p53 to another protein.

60. (New) The method of claim 61, wherein the biological event is the binding of p53 to MDM2.

61. (New) The method of claim 2, wherein the biological event is the binding of Rb to another protein.

62. (New) The method of claim 2, wherein the biological event is the binding of Rb, E2F, and DP1.

63. (New) The method of claim 2, wherein the biological event is the binding of a transcriptional activator to another protein that inhibits transcriptional activation.

64. (New) The method of claim 2, wherein the biological event is the binding of a first fusion protein comprising a DNA-binding domain fused to a first protein of interest and a second fusion protein comprising a transcriptional activation domain fused to a second protein of interest known to bind the first protein of interest.

65. (New) The method of claim 64, wherein the DNA-binding domain is selected from the group consisting of LexA DNA-binding domain and GAL4 DNA-binding domain.

66. (New) The method of claim 64, wherein the transcriptional activation domain is B42 transcriptional activation domain.

67. (New) The method of claim 2, wherein the reporter gene encodes PIN (protein inhibitor of NO synthase).

68. (New) The method of claim 2, wherein the linkage is severable by addition of a thiol-containing reagent.